



**ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF PEDIATRICS AND CHILD HEALTH**

**PARENTAL KNOWLEDGE, ATTITUDE AND PRACTICE ABOUT
THEIR CHILDREN ATTENDING MEDICAL CARE AT TASH
REGARDING COVID-19 INFECTION, ADDIS ABABA, ETHIOPIA**

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NOVEMBER, 2021

ADDIS ABABA, ETHIOPIA

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A RESEARCH THESIS SUBMITTED TO DEPARTMENT OF PEDIATRICS AND CHILD
HEALTH, SCHOOL OF MEDICINE, COLLEGE OF HEALTH SCIENCES, ADDIS ABABA
UNIVERSITY FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
CERTIFICATE IN PEDIATRICS AND CHILD HEALTH.

NOVEMBER, 2021

ADDIS ABABA, ETHIOPIA

Declaration

I, the undersigned, Pediatrics and Child Health final year resident declare that this thesis done is my original work in partial fulfillment for the certificate of Pediatrics and Child Health.

Title: - Parental Knowledge, attitude and practice about their children attending medical care at TASH regarding COVID-19 infection, Addis Ababa, Ethiopia

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ACKNOWLEDGEMENT

I would like to express my heart felt gratitude to my advisor Professor Damte Shimelis (Professor of Pediatrics and Child Health, Pediatric nephrologist) for continuous support and constructing advice. I am grateful to the parents who participated in the study.

I would also like to thank nurses who participated in the data collection and Mr.Kabtimer Shiferaw for his valuable comment during statistical analysis. I would like to express my deepest gratitude for my family and friends for their support.

Finally I would like to express my gratitude to Addis Ababa University for sponsoring my thesis and the department of Pediatric and Child health for giving me the opportunity to work on this topic.

ABBREVIATIONS

AAP= American Academy of Pediatrics

ACE= Angiotensin Converting Enzyme

AAU= Addis Ababa University

CDC= Centers for Disease Control and Prevention

COVID-19= Coronavirus Disease 2019

CoVs= Coronaviruses

ICT = International Committee on Taxonomy

KAP= Knowledge, Attitude and Practice

MERS-CoV= Middle East Respiratory Syndrome Coronavirus

MIS-C= Multisystem Inflammatory Syndrome in Children

MOH= Ministry of Health

NAAT= Nucleic Acid Amplification Test using

OPD= Outpatient department

RT-PCR= Reverse Transcriptase viral Polymerase Chain Reaction

RNA= Ribonucleic acid

SARS-CoV= Severe Acute Respiratory Syndrome Coronavirus

SSA= Sub-Saharan Africa

TASH = Tikur Anbessa Specialized Hospital

US FDA=United states Food and Drug administration

WHO= World Health Organization

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Abstract

Background: Covid-19 is one of the global public health crises. Resource limited countries like Ethiopia are at risk of being severely affected by the pandemic. Children of all ages can be affected by the virus and are one of the burdens of Covid-19 pandemic. As children accounts for majority of the population in Ethiopia, early diagnosis and management of the disease is crucial to curb the spread of the disease. Parents have a significant role in children's health. Hence the aim of this study is to assess parents' knowledge, attitude and practice towards Covid-19 in children.

Methodology: A cross-sectional study was conducted at TASH located in Addis Ababa, the capital city of Ethiopia from June to August 2021 G.C. Parents whose children were admitted at TASH and parents who came to pediatric regular OPD and referral clinics were used as a study population. An interview based questionnaire was used to gather information from study participants. Data was entered using SPSS version 25 to be analyzed based on the objectives of the study. A descriptive analysis was performed. Inferential statistics were investigated using a chi-square test. P value less than 0.05 was considered as statistically significant.

Result: A total of 385 parents who fulfilled the inclusion criteria were enrolled. The finding of this study reveal that majority of the participants (68.6%) have moderate knowledge whereas 17.7% of participants have poor knowledge. Regarding attitude and practice of parents, 68.3% of participants have good attitude and 51.7% of participants have moderate practice. There was a moderate positive correlation between knowledge score and attitude score ($r=0.56$, $p<0.001$), between knowledge score and practice score ($r=0.44$, $p<0.001$) and between attitude score and practice score ($r=0.43$, $p<0.001$).

Conclusion: The finding of this study suggests that knowledge and practice of parents of children attending medical care at TASH towards COVID-19 in children was moderate. Majority of the parents had good attitude. A considerable number of socio-demographic characteristics of participants affect the knowledge, attitude and practice of parents towards COVID-19 in children.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Covid-19 is one of the global public health crises. It is caused by severe acute respiratory syndrome coronavirus 2(SARS-Cov-2).¹ Africa is the last continent to be strike by the pandemic. It was first reported in Egypt on February 14, 2020 and the virus has now been detected in almost all countries of Africa.² In Ethiopia, the first covid-19 case was reported on March 13, 2020 by MOH.

COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes. Globally, there are fewer Covid-19 cases reported in children compared to adults. As of October 21, 2021, AAP reported more than 6 million child COVID-19 cases in US.

Most children infected with SARS-CoV-2 are asymptomatic or have mild symptoms, most commonly fever, cough, pharyngitis, gastrointestinal symptoms and changes in sense of smell or taste³.A rare complications of COVID-19 is MIS-C with signs and symptoms of persistent fever, inflammation and evidence of organ dysfunction and shock.

Even though children infected with COVID-19 are less likely to develop severe illness compared to adults, they are one of the burdens of the pandemic.

To combat the pandemic, widespread vaccination program was started in early December 2020. Currently the AAP recommends COVID-19 vaccination for all children and adolescents 12 years of age and older who do not have contraindications using a COVID-19 vaccine authorized for use for their age.⁴ On Oct. 29, 2021, US Food and Drug Administration authorized emergency use of the Pfizer-BioNTech COVID-19 vaccine for children ages 5 to 11. Ethiopia introduces COVID-19 vaccination of high risk individuals on March 13, 2021.Vaccination of children against COVID-19 is not started in Ethiopia.

Parents play a significant role in children's health. In order to successfully control the pandemic, there is a need to fully understand their knowledge, attitude and practice (KAP) regarding covid-19 in children. This study will assess the knowledge of parents at TASH regarding mode of transmission, symptoms and signs, prevention and measures practiced by parents to protect their children against COVID-19.

1.2 Background

The novel corona virus disease 2019(COVID-19) is caused by severe acute respiratory syndrome coronavirus 2(SARS-Cov-2). Coronaviruses (CoVs) comprise a large family of enveloped, single-stranded, zoonotic RNA viruses belonging to the family Coronaviridae, order Nidovirales.⁵

The novel CoVs severe acute respiratory syndrome coronavirus (SARS-CoV) emerged in 2002 and Middle East respiratory syndrome coronavirus (MERS-CoV) in 2012. The 2019 novel coronavirus (COVID-19) originated in Wuhan, China in December 2019 and spread to multiple countries.¹ The WHO declared the outbreak as a public health emergency of international concern on January 30, 2020 and as a pandemic on March 11, 2020. As of October 29, 2021 John Hopkins coronavirus resource center reported that there are 246,686,264 confirmed COVID-19 cases and a total of 4,999,265 deaths worldwide. As of October 30, 2021 Ethiopian MOH reported 364,960 COVID-19 confirmed cases and 6451 deaths in Ethiopia.

COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes. Droplet transmission occurs when a person is in in close contact (within 1 m) with someone who has respiratory symptoms (e.g., coughing or sneezing) and is therefore at risk of having his/her mucosae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets. Transmission may also occur through fomites in the immediate environment around the infected person. Transmission of the COVID-19 virus can occur by direct contact with infected people and indirect contact with surfaces in the immediate environment or with objects used by the infected person.⁶

COVID-19 affects all age groups. Main source of infection for children is positive family members. They can also acquire the infection in educational or child care setting. The incubation period has been estimated to be approximately 3–7 days after exposure (the longest incubation period is 14 days). Children infected with COVID-19 may be asymptomatic or may show symptoms mostly fever and cough followed by sore throat,

malaise, muscle pain, dyspnea, headache, nasal discharge, and gastrointestinal symptoms such as vomiting and diarrhea in some patients. Severe manifestations occur in lower rate in children compared with adults, but its occurrence is higher in children with underlying comorbidity and immunosuppression, and in the younger pediatric age group.⁷

The impacts of COVID-19 are jeopardizing child wellbeing. Child well-being is the most important indicator of a country's vitality today and prospects for tomorrow.⁸ Parents are responsible to ensure the welfare of their children. The aim of the study is to assess the knowledge of parents at TASH regarding mode of transmission, symptoms and signs, prevention and measures practiced by parents to protect their children against COVID-19.

1.3 Statement of the problem

COVID-19 pandemic is a global crisis. It has claimed millions of lives worldwide. It has impacted both the supply and demand for healthcare services. Prior to the pandemic, most of the 550 million children living in SSA were already facing many challenges. COVID-19 is added to these challenges.⁸ Ethiopia is one of the sub-Saharan countries that is affected by the pandemic. In a developing country like Ethiopia, where trained human resources and equipment for treatment of COVID-19 are scarce, priority should be given for prevention of viral spread.⁹

Ethiopia remains to have a relatively young population with 43.5 percent under the age of 15 (2017). Focusing on young population is important to combat the pandemic. Children can directly be affected by COVID-19 or they may be asymptomatic and spread the disease. This will have an impact on the country's socio-economic and health sector. In order to halt the spread of the disease, it is essential to improve the knowledge and practice of COVID-19 prevention methods. Parents as a primary caretaker of children have a role in the prevention of COVID-19 in children and whole population. Therefore assessing their knowledge towards COVID-19 in children including symptoms and signs of the disease, modes of transmission and protection measures is crucial.

1.4 Significance of the study

COVID-19 is one of the public health treat in Ethiopia. As children accounts majority of the population in Ethiopia, early diagnosis and management of COVID-19 in children is crucial to curb the spread of the disease. Parents have a vital role in minimising COVID-19 infection in children and whole population. Therefore assessing their knowledge, attitude and practice towards COVID-19 in children is essential.

CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of the study

Throughout history, there have been recorded processions of pandemics that each shaped our history and our society, inclusive of shaping the very basic principles of modern health sciences. Some pandemics had an impact on civilization including the Black Death (bubonic plague pandemic from the fourteenth century) and the Spanish Flu of 1918.¹⁰ The cause for the current pandemic is a coronavirus.

Coronaviruses are single-stranded, positive-sense, enveloped, RNA viruses with crown-like appearance. The International Committee on Taxonomy (ICT) of viruses has classified coronaviruses under family Coronaviridae and order Nidovirales. Toroviruses and coronaviruses are the two representative genera of the family Coronaviridae; they have been further classified in subfamily Coronavirinae.¹¹

Human coronaviruses were first identified in 1965 and are responsible for the respiratory tract infections in major proportion of population worldwide; at least five new human coronaviruses have been identified, including severe acute respiratory syndrome coronavirus (SARS-CoV) in 2002–2003 and Middle East respiratory syndrome coronavirus (MERS-CoV) in 2012.¹¹

In late December 2019, few patients with a history of unexplained fever and symptoms of lower respiratory tract infections were detected in Wuhan, in the Hubei province of China. The etiology of this unknown respiratory infection was not being able to be established; it was classified as pneumonia of unknown etiology initially. Further investigation by the local authority of Chinese Center for Disease Control and Prevention identified the causative pathogen and provisionally named 2019 novel coronavirus (2019-nCoV). On February 11, 2020, the WHO announced that the disease caused by this new coronavirus is COVID-19 which is the acronym of “coronavirus disease 2019.”¹¹

COVID-19 worldwide is less common in children than in adults. The Chinese Centers for Disease Control and Prevention reported that only 2% of the 72,314 reported cases occurred in children that were less than 19 years of age.¹² More recent data in the

United States shows that children account for 9%–12% of patients diagnosed with COVID-19 infection (in general, 90% of children positive for SARS-CoV-2 are asymptomatic or have mild to moderate symptoms). COVID-19 occurs more often among the 12- to 17-year age group compared to the 5- to 11-year age group in the United States.¹³

Children have milder symptoms of COVID-19 infection compared to adults. Several proposed hypotheses explain this difference. The first hypothesis suggests that the expression level of ACE2 may differ between adults and children. One study showed that ACE2 receptors abundantly expressed on well-differentiated ciliated epithelial cells.¹⁴ ACE2 expression on the epithelium of the alveolar cells may be lower in the pediatric population. The second hypothesis proposes that pediatric patients have a qualitatively different response to the SARS-CoV-2 virus relative to adults. By the processes of aging, continuous antigen stimulation and thymic involution will eventually lead to shifts in T cell subset distribution from naïve T cells to central memory T cells, effector T cells, and effector memory T cells.¹⁵ The third hypothesis rests on the premise that the simultaneous presence of other viruses in the epithelial lining of the lungs and airways in young children causes the SARS-CoV-2 virus to compete with them limiting its growth and proliferation.

SARS-CoV-2 mode of transmission in children is similar to those of adults. Transmission between humans is mostly via respiratory droplets through aerosolized viral particles. Close contact or proximity can also be a source of transmission of SARS-CoV-2 via direct or indirect contact with mucous membranes in the eyes, mouth, or nose.

Most children are thought to be exposed to the virus from an adult at home.¹⁶ Vertical transmission of severe acute respiratory syndrome coronavirus 2 is possible and seems to occur in a minority of cases of maternal coronavirus disease 2019 infection.¹⁷ There are concerns of transmission from the infected mother to the infant during breast feeding, despite this global and national health stakeholders have so far univocally encouraged breastfeeding during the COVID-19 pandemic.¹⁸

Children can transmit the virus to others but the transmission rate is unclear with younger children less likely to transmit compared to children >10 years old.¹⁹

The incubation period of COVID-19 is 2–14 days with a median of 6 days after exposure, similar to that in adults. A large proportion of children with COVID-19 are asymptomatic.

When symptomatic, manifestations include fever, nasal congestion/rhinorrhea, dyspnea, loss of sense of smell and taste, cough, sore throat, diarrhea, nausea/vomiting, fatigue, headache, myalgia, and poor feeding/poor appetite.¹³

Rarely MIS-C can occur in children infected with COVID-19. Multisystem inflammatory syndrome in children typically presents between 3 and 6 weeks after SARS-CoV-2 exposure. Symptoms of MIS-C include Kawasaki disease-like features (conjunctivitis, red eyes; red or swollen hands and feet, rash, red cracked lips, swollen glands. In some children, coronary artery enlargement and/or aneurysms have been described. Some children presenting with Kawasaki disease-like syndrome have been noted to have a broader age range and presentation with more gastrointestinal (abdominal pain or diarrhea) and neurologic (headaches/meningitis) manifestations). It also includes Toxic shock syndrome-like features with hemodynamic instability and poor heart function and Cytokine storm/macrophage activation or hyperinflammatory features. Other features of MIS-C include thrombosis or acute kidney injury and shortness of breath suggestive of congestive heart failure or pulmonary embolism. Respiratory symptoms typically reported in adults with COVID-19 may not be present in pediatric patients with MIS-C.²⁰

COVID-19 is diagnosed the same way in pediatric population as adults by testing specimen obtained from upper respiratory tract for nucleic acid amplification test (NAAT) using reverse transcriptase viral polymerase chain reaction (RT-PCR). The common laboratory findings in hospitalized patient include leukopenia, lymphopenia, and increased levels of inflammatory markers. Chest X-ray findings are variable and computed tomography scans of the chest may show ground glass opacities similar to adults or non-specific findings.¹³

Since children usually present with milder symptoms than adults, their management focuses on providing symptomatic and respiratory supports. Several treatment modalities, including the utilization of mechanical ventilation, antivirals, immune-modulating drugs, or other agents, may present promising results in reducing the symptoms of COVID-19, particularly in severe cases.¹² Currently the AAP recommends

COVID-19 vaccination for all children and adolescents 12 years of age and older who do not have contraindications using a COVID-19 vaccine authorized for use for their age.⁴ On Oct. 29, 2021, the Food and Drug Administration authorized emergency use of the Pfizer-BioNTech COVID-19 vaccine for children ages 5 to 11.

As of October 31, 2021 vaccination of children against COVID-19 is not started in Ethiopia.

The pandemic is rumbling through nations leaving behind considerable death and damaged economies. Preventive measures, enveloped in public health advocacy is important to shorten the life span of the pandemic.²¹

In a developing country like Ethiopia, prevention is the primary strategy to combat the pandemic. In order to halt the spread of COVID-19, the country should target to improve the knowledge, attitude, and practice of the community. Parents play an important role in the development and maintenance of a healthy community. They are responsible for the wellbeing of their children. Therefore assessing parents' knowledge, attitude, and practice towards COVID-19 in children is crucial.

There was a cross-sectional study done in City of Zahedan City located at southeast of Iran regarding knowledge, attitude and practice towards COVID-19 among parents or guardians of children who were referred to pediatric clinics in May 2020. The study enrolled 524 parents or guardians. The study finding revealed that the mean score of knowledge was 37.14(SD=4.87) from a maximum possible score of 46. The majority of participants (84%) had correct information about the symptoms of COVID-19. The mean score of attitude was 21.07 (SD=3.04) from a maximum possible score of 25. The mean score of practice was 4.22 (SD=0.83) from a maximum possible score of 5. This study concluded that the participants had good knowledge, positive attitude and sufficient practice towards COVID-19. Knowledge was associated with educational level and marriage status of parents or guardians of patient children. There was positive correlation between knowledge and attitude ($r = 0.308$), knowledge and practice ($r = 0.233$), and attitude and practice ($r = 0.207$).²²

There was a cross-sectional study done in Jordan regarding parents' knowledge and attitude towards COVID-19 in children. It enrolled 810 participants. In this study, 78 % of parents listed fever as a clinical symptom first and 71% of them listed shortness of

breath as the second. 8% of parents also reported skin rash and 81% of them reported heavy coughing and sneezing as symptoms of COVID-19. Moreover, 61% of parents believe that children may be infected, but are asymptomatic. Handshaking (66% of participants) and contacting surfaces like doorknobs and tables (82% of participants) were reported as modes of transmission. Measures to protect children against COVID-19 included frequent hand washing for children and themselves (90% of participants), routinely cleaning and disinfecting surfaces that had been in connection with known or suspected patients (77% of participants) and placing known or suspected patients in well-ventilated individual rooms (77% of participants) were named. For governmental measures, many parents (99.9%) reported that quarantining all members of the family was an effective measure in protecting children and 97.7% reported that educating individuals on COVID19 is essential in fighting the spread of the disease. The finding of the study indicates that the parents had a good understanding of the clinical signs, mode of transmission and protection measures. Almost 90% of the parents have an appropriate attitude towards companioning children within crowds.²³

There was a study done in Shenzhen Maternity & Child Healthcare Hospital, china regarding knowledge of and attitudes toward coronavirus disease 2019 (COVID-19) among the parents of child dental patients during the outbreak in February 2020. 148 parents were included in the study. A total of 94.59% of the parents said they paid high attention to COVID-19 and explained it to their children; 66.22% thought the dental department environment was more dangerous than other public places; 91.89% believed the dental department had a higher risk of virus infection; and 83.78% said they would take their children to a dental department if the children had a severe toothache. Approximately 81.08% of the parents expressed confidence after they are informed about the preventive measures taken in the dental department to ensure safe treatment for their children.²⁴

A scoping review was done regarding Knowledge, attitude, perception, and preventative practices towards COVID-19 in sub-Saharan Africa. Studies included populations from the following SSA countries: Ethiopia, Nigeria, Cameroon, Uganda, Rwanda, Ghana, Democratic Republic of Congo, Sudan, and Sierra Leone. All the included studies showed evidence of knowledge related to COVID-19. Eleven studies showed that

participants had a positive attitude towards COVID-19, and fifteen studies showed that participants had good practices towards COVID-19. Most of the participants had adequate knowledge related to COVID-19. Despite adequate knowledge, the attitude was not always positive. The study highlighted that further education is necessary to convey the importance of forming a positive attitude and continuous preventive practice towards reducing contraction and transmission of COVID-19.²⁵

The first survey in Addis Ababa to assess the public KAP towards the COVID-19 pandemic as well as to assess the preparedness and response of service providers in the city was done from March to April 2020. 839 public participants were enrolled in the study. The result of the study revealed that majority of the respondents (58.6%) had moderate knowledge about COVID-19, whereas 37.2% had good knowledge. Moreover, 60.7% and 59.8% of the participants had a positive attitude towards preventive measures and good practice to mitigate the pandemic, respectively.²⁶

CHAPTER THREE: OBJECTIVES

3.1. General Objective

- To assess the KAP of parents regarding COVID-19 in children.

3.2. Specific objective

- To assess the level of KAP of parents whose children were attending medical care at TASH towards COVID-19 in children.
- To assess the association of socio-demographic factors with KAP of parents towards COVID-19 in children.

CHAPTER FOUR: MATERIALS AND METHODS

Study Area and Period

The study was conducted at TASH located in Addis Ababa, the capital city of Ethiopia, from June to August 2021 G.C.

Study Design

A cross-sectional descriptive design was conducted.

Source Population

All parents whose children were attending medical care at TASH.

Study Population

Parents whose children were admitted at emergency and wards at TASH and parents who came to pediatric regular OPD and referral clinics from June to August 2021GC who fulfilled the inclusion criteria.

Inclusion Criteria

All parents who are greater than 18 years old and who gave consent to participate in the study were included.

Exclusion Criteria

Parents who are less than 18 years of age and parents who don't give consent to participate in the study were excluded.

Sample Size Determination and Sampling Procedure

The sample size is calculated by using a single proportion population formula by considering the following assumptions.

50% proportion was used to get the maximum sample size by taking into account 95% confidence interval ($Z_{\alpha/2}=1.96$), marginal error (d) of 5%.

$$n = \frac{[Z_{\alpha/2}]^2 P(1-P)}{d^2}$$

$$n = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)(0.05)} = 385$$

$$(0.05)(0.05)$$

A total of 385 participants were included in the study.

Consecutive sampling technique was used to collect data from study participants.

Data collection Procedure

An interview based questionnaires were used to gather information from study participants. The Questionnaire was prepared based on previous similar studies. Each questionnaire included 4 parts. The first part was socio-demographic data of study participants and the other three parts included close ended questions to assess knowledge, attitude and practice of parents respectively.

Study variables

Dependent Variables

- Knowledge, Attitude and Practice

Independent Variables

- Parental age
- Gender
- Residence
- Educational status

- Monthly household income
- Marital status
- Number of children per household
- Source of information regarding COVID-19

Operational Definitions

Knowledge towards COVID-19 in children

Knowledge of the parents was assessed by using 40 questions that were developed by considering previous similar research. The right answer to each question has a score of 1 and wrong answers 0. Modified Bloom's cut-off points were used to judge knowledge as good (80%–100%), ≥ 32 , moderate (50%–79%, 20–31), or poor ($< 50\%$, < 20).

Attitude towards COVID-19 in children

Attitude of the parents was assessed by using eight questions. The attitude was scored as follows: good (6-8), moderate (5) and poor (≤ 4).

Practice regarding COVID-19 in children

The practice of the parents was measured using 7 questions each having 4 choices that were coded from 0 (never) to 3 (always). All the questions were summed together to give us the practice score with possible score ranging from 0 to 21. Good practice was defined as scoring from 17 to 21, moderate from 12 to 16, and poor from 0 to 11.

Data Quality Control Measures

The study questionnaire was reviewed for completeness and pre-testing was undertaken. The questionnaires were pre-tested on 5% of the actual sample size in similar setting, which was not included in the analysis. Data was collected by three nurses supervised by the principal investigator. They were trained prior to data

collection. The aim of the study and contents of the questionnaire was explained to the parents briefly. At time of data collection filled questionnaires were checked for completeness and consistency of information by the data collector and principal investigator daily. The study was done as per the ethical code of conduct.

Data Analysis

Data was entered using SPSS version 25 to be analyzed based on the objectives of the study. Data cleaning and screening was conducted. A descriptive analysis was performed. Specific knowledge, attitude and practice questions were used to score study participants. For each question, 1 point was given for answering correctly, whereas 0 point was given when the participants respond incorrectly. Based on the total score, the parent's KAP level was categorized as good, moderate or poor, by using modified Bloom's cut-off points. All the preliminary assumptions were checked and appropriate actions were taken. Inferential statistics between the socio-demographic factors and the parent's KAP towards COVID-19 in children were investigated using a Pearson chi-square test. P value less than 0.05 was considered as statistically significant.

Ethical clearance

The study was conducted after the approval of AAU College of Health Sciences, Department of Pediatrics and Child Health and permission from TASH was assured. Written informed consent was obtained from respondents who participated in the study. Identity and names were not included in the questionnaire. The confidentiality of the study participants was kept and the information collected was used solely for the intended purposes.

Results

Socio-demographic characteristics of the study participants

A total of 385 parents participated in the study yielding a response rate of 100%. The median (IQR) age of the study participants was 32 years (28, 38). Nearly two-thirds (63.9%) of the study participants were female, and most (84.2%) of them were urban residents. Majority (60%) of the study participants were from Addis Ababa, and 34.8% of participants had primary education and below. Majority of the parents gather information about COVID-19 from TV/radio/news channels (n=331; 86%) and family, friends and neighbors (n=293; 76.1%). See Table 1.

Table 1: Socio-demographic characteristics of parents who participated in the study

Variables	Frequency	Percentage (%)
Parental age in years		
20-29	128	33.2
30-39	195	50.6
>=40	62	16.1
Sex		
Male	139	36.1
Female	246	63.9
Residence		
Urban	324	84.2
Rural	61	15.8
Region		
Amhara	38	9.9
Oromia	71	18.4
SNNPR	33	8.6
AA	231	60.0
Other	12	3.1
Educational status		
No formal education	45	11.7
Primary education	89	23.1
Secondary education	105	27.3
Diploma	46	11.9
Degree	74	19.2
Higher education	26	6.8
Monthly household income		
<=1000 birr	48	12.5
1001-5000 birr	184	47.8
5001-10000 birr	108	28.1

> 10000 birr	45	11.7
Occupation		
Governmental	88	22.9
Non-governmental	60	15.6
Trader	68	17.7
Daily laborer	22	5.7
Farmer	28	7.3
House wife	115	29.9
Other	4	1.0
Marital Status		
Single	11	2.9
Married	343	89.1
Divorced	23	6.0
Widowed	8	2.1
Number of children per		
One to three children	290	75.3
Four to six children	95	24.7
Source of information regarding		
Family, friends and neighbors	293	76.1
TV, radio and news channels	331	86.0
Social media	193	50.1
MOH website	83	21.6
Google and search engines	55	14.3
Scientific article and research	19	4.9

Knowledge of parents participated in the study

Among the study participants, only 13.8% (n=53) has good knowledge towards COVID-19 in children. 68.6% of study participants (n=264) has moderate knowledge and 17.7% of study participants (n=68) has poor knowledge. The mean score of knowledge was 25.5 (SD=5.9) from a maximum possible score of 40.

In this study, majority of the parents mentioned fever as a clinical symptom (n=324; 84.2%) followed by cough (n=322; 83.6%). Figure 1

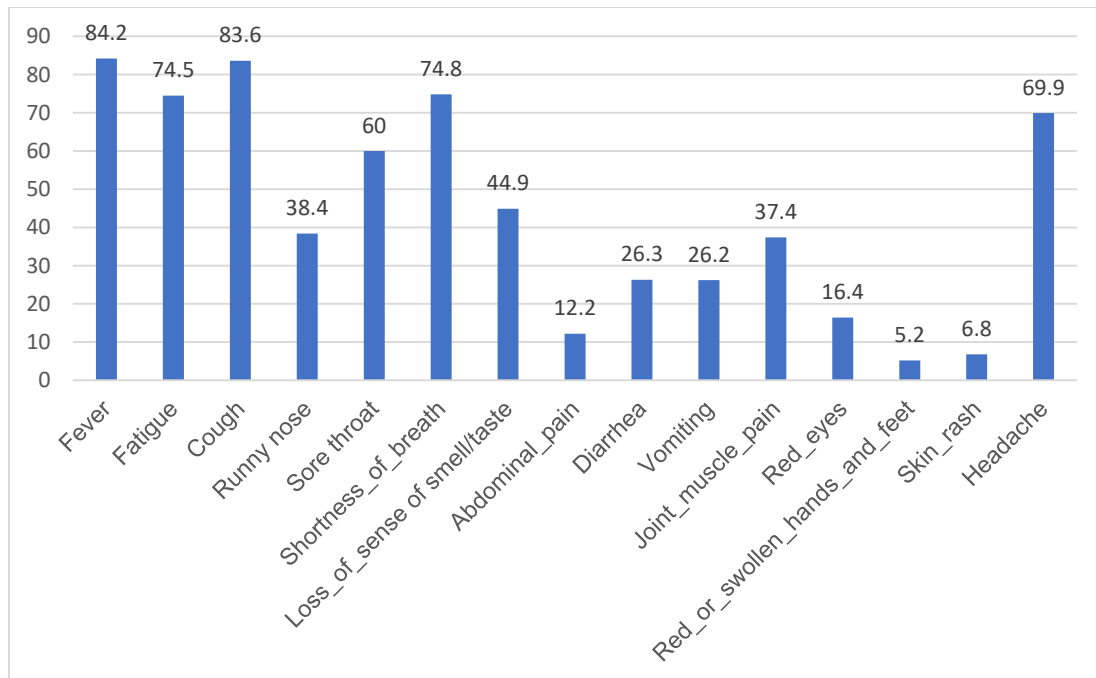


Figure 1: Percentage distribution of knowledge of parents towards symptoms of COVID-19 in children

98.2% of parents (n=378) reported contact with infected individuals as a main route of acquiring COVID-19 in children. Figure 2

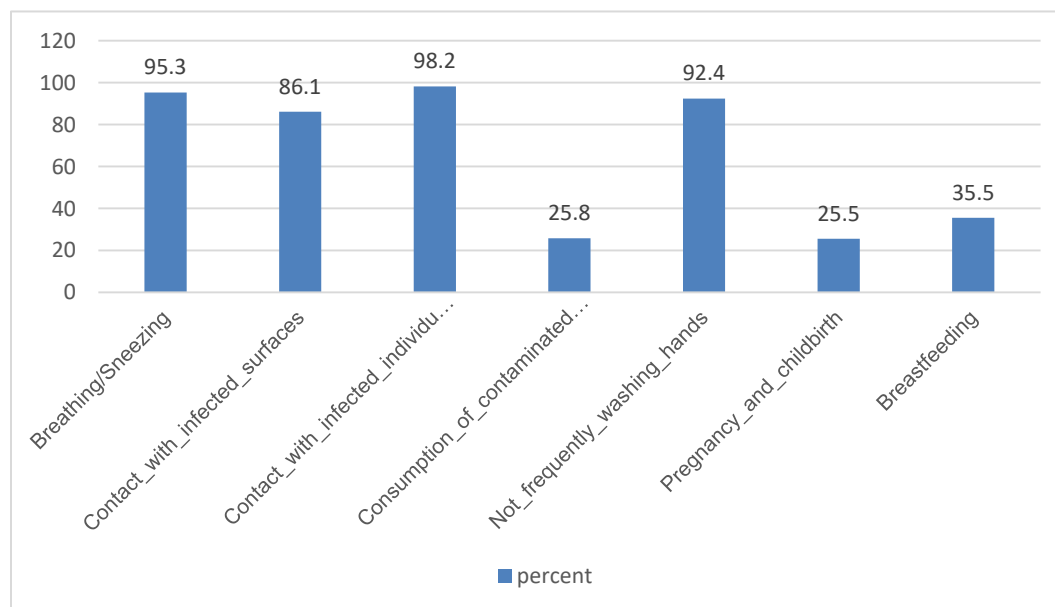


Figure 2: Percentage distribution of knowledge of parents towards how children acquire COVID-19

Regarding knowledge assessment of prevention mechanisms of COVID-19 in children, the study participants mentioned using facemasks (n=367, 95.3%), frequent washing of hands (n=362, 94%), staying > 2 meters from others (n=351, 91.2%), frequent disinfectant use (n=342, 89%) and COVID-19 vaccination (n=151, 39.2%) as a prevention of COVID-19 in children.

Factors associated with knowledge

The association between status of knowledge and socio-demographic variables was tested using Person's chi square. The result of the study showed that level of educational status (($P < 0.001$), no formal education; 6.7% has good knowledge vs. higher education; 26% has good knowledge), occupation (($P = 0.005$), governmental employee; 25% has good knowledge vs. daily laborer 3.8% has good knowledge) and monthly household income (($P < 0.001$), among parents who earn > 10,000 birr; 35.6% good knowledge vs. < 1000 birr has 8.3% good knowledge) were associated with knowledge status of the study participants.

On the other hand parental age ($P = 0.441$), gender ($P = 0.125$), residence ($P = 0.093$), marital status ($P = 0.773$), and number of children per household ($P = 0.33$) were not associated with knowledge status of the study participants.

Regarding source of information about COVID-19 Family/friends/neighbors ($P = 0.032$), Social media ($P = 0.003$), MOH website ($P < 0.001$), Google/search engines ($P < 0.001$), and scientific article/research ($P < 0.001$) were associated with knowledge status of participants. TV/radio/news channels ($P = 0.8$) was not associated with the knowledge status of participants.

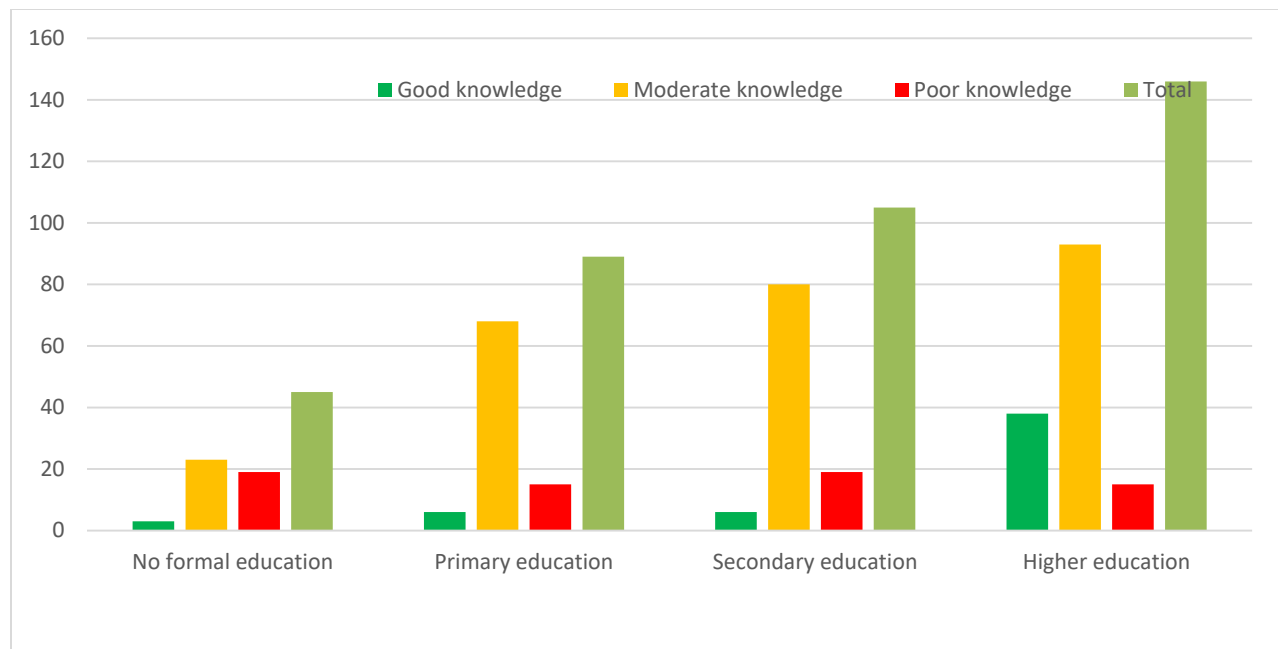


Figure 3: Knowledge status of the study participants by level of education

Attitude of parents participated in the study

Among the study participants, 68.3 % of parents (n=263) has good attitude, 19.7% of parents (n=76) has moderate attitude, and 11.9% of parents (n=46) has poor attitude. The mean score of attitude was 6.1 (SD = 1.5) from a maximum possible score of 8.

In the study, willingness of parents to let their children get COVID-19 vaccine if it is introduced in Ethiopia is found to be 73.8%. (Figure 4)

Among parents who are not willing to let their children get COVID-19 vaccine, 48.5% mentioned fear of side effects after COVID-19 vaccination as a reason. (Table 2)

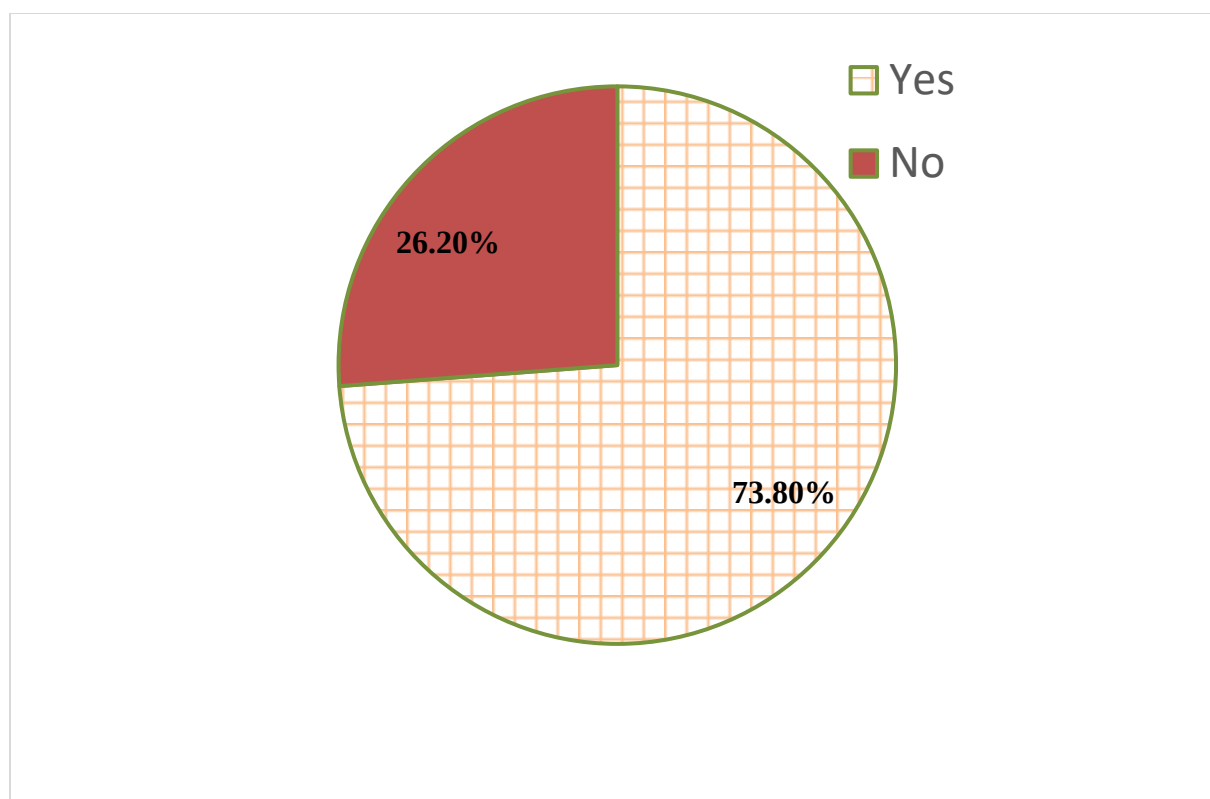


Figure 4: Willingness of the parents to let their children get COVID-19 vaccine if COVID-19 vaccine is introduced in Ethiopia

Table 2: Reasons mentioned by parents for not letting their children get COVID-19 vaccine.

Reason for not letting their children get COVID-19 vaccine	Number	Percent
Fear of side effects after COVID-19 vaccination	49	48.5
COVID-19 vaccine is linked to evil spirits	8	7.9
Children have milder symptoms of COVID-19	2	2.0
I don't believe in the effectiveness of COVID-19 vaccine	31	30.7
I don't have enough information about COVID-19 vaccine	11	10.9

Factors associated with attitude of parents

The study finding indicate that residence of parents (($P < 0.001$), Urban; 73% good attitude vs. Rural 42.6% good attitude), level of education (($P < 0.001$), No formal education; 44.4% good attitude vs. Higher education; 81.5% good attitude) and occupation (($P < 0.001$), Governmental employee; 83% good attitude vs. Farmers; 53.6% good attitude)) were associated with attitude of parents.

On the other hand parental age ($P = 0.517$), gender ($P = 0.318$), monthly household income ($P = 0.052$), marital status ($P = 0.236$), and number of children per household ($P = 0.068$) were not associated with attitude of study participants.

Regarding source of information about COVID-19, Social media ($P < 0.001$), MOH website ($P < 0.001$), Google/search engines ($P = 0.02$), and scientific article/research ($P = 0.01$) were associated with attitude of participants. Family/friends/neighbors ($P = 0.585$) and TV/radio/news channels ($P = 0.212$) were not associated with the attitude of study participants.

Practice of parents participated in the study

Among 385 study participants, 199 participants (51.7%) has moderate practice towards COVID-19 in children. 127 participants (33%) has good practice and 59 participants (15.3%) has poor practice.

The mean score of practice was 14.6 (SD = 3.8) from a maximum possible score of 21. Specific response to practice-based characteristics is mentioned below.

Table 3: Practice of the parents participated in the study

Variables	Response			
	Always (no.(%))	Often (no.(%))	Sometimes (no. (%))	Never (no.(%))
Make sure your child wear facemask before leaving home	153 (39.7)	145 (37.7)	71 (18.4)	16 (4.2)
Make sure your child wash hands	148 (38.4)	188 (48.8)	44 (11.4)	5 (1.3)
Clean and disinfect surfaces that your child is in contact	188 (48.8)	158 (41)	157 (40.8)	22 (5.7)
Prevent your children from handshaking hugging kissing	44 (11.4)	184 (47.8)	75 (19.5)	27 (7)
Make sure your child don't consume food outside	5 (1.3)	132 (34.3)	67 (17.4)	27 (7)
Make sure your child don't go to crowded places	147 (38.2)	146 (37.9)	71 (18.4)	21 (5.5)
Make sure shared spaces in home have good airflow	240 (62.3)	94 (24.4)	42 (10.9)	9 (2.3)

Factors associated with practice

The result of the study showed that residence (($p < 0.001$), urban; 38.6% good practice vs. rural; 3.3% good practice), level of educational status (($P < 0.001$), no formal education; 15.6% good practice vs. higher education; 49.3%), occupation (($P = 0.004$), governmental employee; 42% good practice vs. farmers 3.8% good practice), monthly household income (($P = 0.001$), > 10,000 birr; 48.9% good practice vs. 1001 birr-5000 birr 23.4% good practice), number of children per household (($P = 0.018$), 1-3 children; 35.9% good practice vs. 4-6 children; 24.2% good practice) were associated with practice of the study participants.

On the other hand parental age ($P = 0.463$), gender ($P = 0.5$), and marital status ($P = 0.494$) were not associated with practice of study participants.

Regarding source of information about COVID-19, Social media ($P < 0.001$), MOH website ($P < 0.001$) and Google/search engines ($P < 0.001$) were associated with practice

of participants. Family/friends/neighbors ($P=0.994$), TV/radio/news channels ($P=0.946$) and scientific article/research ($P=0.156$) were not associated with practice of study participants.

Correlations among knowledge, attitude and practice

A Pearson product-moment correlation coefficient was computed to assess the relationship between knowledge score, attitude score and practice score of the parents. As a result, it was found that there was a moderate positive correlation between knowledge score and attitude score ($r=0.56$, $p<0.001$). Thus, increases in the knowledge score of the parents were correlated with increases in their attitude score. Alike, there was a moderate positive correlation between knowledge score and practice score ($r=0.44$, $p<0.001$). Thus, increases in the knowledge score of the parents were correlated with increases in their practice score too. Besides, there was a moderate positive correlation between attitude score and practice score ($r=0.43$, $p<0.001$). Thus, increases in the attitude score of the parents were correlated with increases in their practice score.

Discussion

Although there are many studies done on public KAP towards COVID-19 in Ethiopia, there is lack of study done on parents' KAP towards COVID-19 in children.

This cross sectional study was conducted to assess the knowledge, attitude and practice of parents towards COVID-19 in children including clinical signs of disease, mode of transmission and prevention practices. 385 parents participated in the study.

On socio-demographic characteristics of participants, the level of education of majority of the study participants (62.1%) was secondary education and below.

The parents who participated in this study mainly gather information about COVID-19 from TV/radio/ news channels and family/ friends/ neighbors. The cross sectional study done in Jordan regarding parents' knowledge and attitude towards COVID-19 in children showed that parents depend mainly on the website of the WHO and news channels.

Knowledge assessment in this study included signs and symptoms, the disease transmission mode and prevention mechanisms. The result of the study shows that most parents mentioned fever as a clinical symptom (n=324; 84.2%) followed by cough (n=322; 83.6%). This is consistent with finding of Jordanian study which showed that 78% of parents listed fever as a clinical symptom first and 81% of parents listed heavy coughing and sneezing as a symptom of COVID-19.

This study showed that more than 90% of parents mentioned contact with infected individuals (handshaking, hugging, kissing), through breathing/sneezing, and not frequently washing their hands as a means of acquiring COVID-19 in children. 1/4th to 1/3rd of parents believed that children can acquire COVID-19 by eating contaminated food and through pregnancy, delivery and breast feeding. (If the mother is infected with COVID-19).

Regarding knowledge assessment of prevention mechanisms of COVID-19 in children, more than 90% of parents mentioned using facemasks, frequent washing of hands, and keeping distance. Only 40% of parents reported COVID-19 vaccination as a prevention of COVID-19 in children.

The finding of this study reveal that majority of the participants (68.6%) have moderate knowledge whereas 17.7% of participants have poor knowledge. The mean score of knowledge was 25.5 (SD=5.9) from a maximum possible score of 40. This result is lower than a similar study done in Iran which showed that the mean score of knowledge was 37.14(SD=4.87) from a maximum possible score of 46. In this study, the level of education of majority the study participants was secondary education and below. The knowledge score discrepancy may be due to low level of education of the participants, gap in the health information and dissemination and limited resources.

This study showed that level of education ($P<0.001$), occupation ($P=0.005$), and monthly household income ($P<0.001$) has statistically significant association with the knowledge of parents. The study in Iran showed that educational levels had a significant relationship with knowledge (P value = 0.005).

Majority of study participants have good attitude towards COVID-19 in children. The mean score of attitude was 6.1 (SD = 1.5) from a maximum possible score of 8. This is comparable to the study in Iran which showed that the mean score of attitude was 21.07 (SD = 3.04) from a maximum possible score of 25.

Among attitude assessment questions, willingness to let their children get COVID-19 vaccine if it is introduced in Ethiopia was included. Majority of respondents (73.8%) were willing to let their children get COVID-19 vaccine. 26.2% of study participants were not willing to let their children get COVID-19 vaccine. Among the unwilling parents, almost half of participants mentioned fear of side effects as a reason. In this study the percentage of unwilling participants has increased compared to a study done in residents of one sub-city in Addis Ababa regarding COVID-19 vaccine hesitancy prior to the introduction of COVID-19 vaccine in Ethiopia. One out of five (19.1%) participants was not willing to get vaccinated. Out of them, 43.6% were not willing to take the vaccine due to fear of side effects. Close to 20% of the participants thought that children shouldn't get vaccinated.²⁷ The percentage increment in this study may be due to knowledge gap and misconceptions.

Currently the AAP recommends COVID-19 vaccination for all children and adolescents 12 years of age and older who do not have contraindications using a COVID-19 vaccine authorized for use for their age.⁴ On Oct. 29, 2021, the Food and Drug Administration

authorized emergency use of the Pfizer-BioNTech COVID-19 vaccine for children ages 5 to 11. Safety data from the trials, which included more than 3,000 children who received the vaccine, found the most common reactions were pain at the injection site, fatigue and headache. Reactions were mostly mild or moderate. There were no serious adverse events related to the vaccine, including myocarditis or anaphylaxis. Preparing to vaccinate children is essential to compact the current pandemic.

In this study, it is found that area of residence, level of education and occupation has statistically significant association with attitude of parents.

Regarding practice of parents towards COVID-19 in children, half of the participants have moderate practice. Only 33% of participants have good practice. The mean score of practice was 14.6 (SD = 3.8) from a maximum possible score of 21. This result is lower than the study in Iran which showed that the mean score of practice was 4.22 (SD=0.83) from a maximum possible score of 5. This may be due to socio demographic characteristics of the study participants, availability of resources, and differences in study time. (The study in Iran was conducted earlier in the pandemic)

Area of residence, level of education and occupation, monthly household income and number of children per household has statistically significant association with practice of parents towards COVID-19 in children. In the Iranian study, it was found that marriage status had significant association with attitude and practice.

To improve practice of the parents, educating and advocating prevention practices is important. Especially there is a significant gap in rural areas. This may be attributed to availability of resources. The government, MOH and all health professional have a role to combat these problems and halt the spread of the disease.

Conclusion

The finding of this study suggests that knowledge and practice of parents of children using medical service at TASH towards COVID-19 in children was moderate. Majority of the parents had good attitude. There was a moderate positive correlation between knowledge score and attitude score, knowledge score and practice score and attitude score and practice score. The parents who participated in this study mainly gather information about COVID-19 from TV/radio/ news channels. The determinant factors of knowledge of parents towards COVID-19 in children were education, occupation and monthly household income. The determinant factors of attitude were area of residence, level of education and occupation. The determinant factors of practice were area of residence, level of education, occupation, monthly household income and number of children.

Limitations of the study

Consecutive sampling was used in the study. Therefore the result of the study cannot be generalized to the target population because of possible bias of the sampling method.

Recommendation

Appropriate strategies have to be implemented to enhance the knowledge of parents towards COVID-19 in children through accessible platform especially in rural areas. Optimizing public health information and dissemination regarding COVID-19 in children is essential to fill the knowledge gap. Regarding prevention practice of parents, providing relevant resources is important to halt the spread of the pandemic.

REFERENCES

1. Zimmermann P, Curtis N. Coronavirus infections in children including COVID-19: An overview of the epidemiology, clinical features, diagnosis, treatment and prevention options in children. *Pediatr Infect Dis J*. 2020;39(5):355-368. doi:10.1097/INF.0000000000002660
2. Lone SA, Ahmad A. COVID-19 pandemic—an African perspective. *Emerg Microbes Infect*. 2020;9(1):1300-1308. doi:10.1080/22221751.2020.1775132
3. Zimmermann P, Curtis N. Why is COVID-19 less severe in children? A review of the proposed mechanisms underlying the age-related difference in severity of SARS-CoV-2 infections. *Arch Dis Child*. 2021;106(5):429-439. doi:10.1136/archdischild-2020-320338
4. COVID-19 Vaccines in Children and Adolescents. *Pediatrics*. Published online 2021:e2021052336. doi:10.1542/peds.2021-052336
5. Maier HJ, Bickerton E, Britton P. Coronaviruses: Methods and protocols. *Coronaviruses Methods Protoc*. 2015;1282(1):1-282. doi:10.1007/978-1-4939-2438-7
6. Pan A, Liu L, Wang C, et al. Association of Public Health Interventions with the Epidemiology of the COVID-19 Outbreak in Wuhan, China. *JAMA - J Am Med Assoc*. 2020;323(19):1915-1923. doi:10.1001/jama.2020.6130
7. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497-506. doi:10.1016/S0140-6736(20)30183-5
8. Transfers C. COVID-19 : A Catastrophe for Children in Sub-Saharan Africa. 2020;(November):18-24.
9. Nkengasong JN, Mankoula W. Looming threat of COVID-19 infection in Africa: act collectively, and fast. *Lancet*. 2020;395(10227):841-842. doi:10.1016/S0140-6736(20)30464-5
10. History B. Psychiatry of Pandemics. *Psychiatry of Pandemics*. Published online 2019. doi:10.1007/978-3-030-15346-5
11. Jaiswal NK, Saxena SK. Classical Coronaviruses. 2020;2019(December 2019):141-150. doi:10.1007/978-981-15-4814-7_12
12. Wati DK, Manggala AK. Overview of management of children with COVID-19. *Korean J Pediatr*. 2020;63(9):345-354. doi:10.3345/cep.2020.00913
13. Adeyinka A, Bailey K, Pierre L, Kondamudi N. COVID 19 infection: Pediatric perspectives. *J Am Coll Emerg Physicians Open*. 2021;2(1):1-11. doi:10.1002/emp2.12375

14. Jia HP, Look DC, Shi L, et al. ACE2 Receptor Expression and Severe Acute Respiratory Syndrome Coronavirus Infection Depend on Differentiation of Human Airway Epithelia. *J Virol*. 2005;79(23):14614-14621. doi:10.1128/jvi.79.23.14614-14621.2005
15. Saule P, Trauet J, Dutriez V, Lekeux V, Dessaint JP, Labalette M. Accumulation of memory T cells from childhood to old age: Central and effector memory cells in CD4+ versus effector memory and terminally differentiated memory cells in CD8+ compartment. *Mech Ageing Dev*. 2006;127(3):274-281. doi:10.1016/j.mad.2005.11.001
16. Posfay-Barbe KM, Wagner N, Gauthey M, et al. COVID-19 in children and the dynamics of infection in families. *Pediatrics*. 2020;146(2). doi:10.1542/peds.2020-1576
17. Kotlyar AM, Grechukhina O, Chen A, et al. Vertical transmission of coronavirus disease 2019: a systematic review and meta-analysis. *Am J Obstet Gynecol*. 2021;224(1):35-53.e3. doi:10.1016/j.ajog.2020.07.049
18. Vassilopoulou E, Feketea G, Koumbi L, Mesiani C, Berghea EC, Konstantinou GN. Breastfeeding and COVID-19: From Nutrition to Immunity. *Front Immunol*. 2021;12(April). doi:10.3389/fimmu.2021.661806
19. Kogut A, Ramirez D, Foster M. Ce Pt E D Us Cr Ip. *Ann Med*. 2020;4533(0):1-14. <http://dx.doi.org/10.1080/07853890.2020.1840620>
20. Bautista-Rodriguez C, Sanchez-De-Toledo J, Clark BC, et al. Multisystem inflammatory syndrome in children: An international survey. *Pediatrics*. 2021;147(2). doi:10.1542/peds.2020-024554
21. Karia R, Gupta I, Khandait H, Yadav A, Yadav A. COVID-19 and its Modes of Transmission. *SN Compr Clin Med*. 2020;2(10):1798-1801. doi:10.1007/s42399-020-00498-4
22. , et al. Knowledge, Attitude, and Practice towards COVID-19 Among Parents or Guardians of Patient Children. *Casp J Heal Res*. 2020;5(2):39-44. doi:10.29252/cjhr.5.2.39
23. Abuhammad S. Parents' knowledge and attitude towards COVID-19 in children: A Jordanian Study. *Int J Clin Pract*. 2021;75(2). doi:10.1111/ijcp.13671
24. Sun J, Xu Y, Qu Q, Luo W. Knowledge of and attitudes toward COVID-19 among parents of child dental patients during the outbreak. *Braz Oral Res*. 2020;34. doi:10.1590/1807-3107BOR-2020.VOL34.0066
25. Nwagbara UI, Osual EC, Chireshe R, et al. Knowledge, attitude, perception, and preventative practices towards COVID-19 in sub-Saharan Africa: A scoping review. *PLoS One*. 2021;16(4 April):1-20. doi:10.1371/journal.pone.0249853

26. Desalegn Z, Deyessa N, Teka B, et al. COVID-19 and the public response: Knowledge, attitude and practice of the public in mitigating the pandemic in Addis Ababa, Ethiopia. *PLoS One*. 2021;16(1 January). doi:10.1371/journal.pone.0244780
27. Dereje N, Tesfaye A, Tamene B, et al. COVID-19 Vaccine hesitancy in Addis Ababa, Ethiopia: A mixed-methods study. *medRxiv*. Published online 2021:21. <https://www.medrxiv.org/content/10.1101/2021.02.25.21252443v1>

Annexes

Annex I: Information sheet (English version)

Questionnaire code number Date

My name is Dr. Bethelhem Damtie. I am conducting a study for partial fulfillment of the requirements for specialty certificate in pediatrics and child health from Addis Ababa

University College of health sciences, titled on “Assessment of Knowledge, Attitude and Practice of parents of children using medical service at Tikur Anbessa Specialized Hospital towards Covid-19 in children”

Purpose: The purpose of this study is to assess Knowledge, Attitude and Practice of parents of children using medical service at Tikur Anbessa Specialized Hospital towards Covid-19 in children.

Procedure: The study will be conducted in Tikur Anbessa Specialized Hospital. An interview based questionnaire is prepared to assess Knowledge, Attitude and Practice of parents whose children have been admitted at emergency and wards at the hospital and parents who come to pediatric regular OPD and referral clinics towards Covid-19 in children.

Risks: There is a risk that you may share some personal information and you may feel uncomfortable. However, I do not wish for this to happen. You do not have to answer any question if you feel the question(s) are too personal and makes you uncomfortable.

Benefits: There will be no direct benefit to you, but your participation is likely to help me in assessing knowledge, attitude and practice of parents of children using medical service at TASH towards Covid-19 in children.

Confidentiality: I would like to inform you that this is a purely academic study and obtained information will not be used for any other purpose. All information provided by you will be kept confidential and also the source of information will remain anonymous.

Right to refuse or withdraw: Your participation in this study is voluntarily and also have the right not to answer a particular question that you don't want to answer. You do not have to take part in this research if you do not wish to do so.

Who to Contact: If you have any questions regarding the study, you can contact the principal investigator.

Address of the principal investigator

Name: Dr.Bethelhem Damtie

Phone number: 0929921877

Annex II: Certificate of consent (English version)

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study

1. I agree to participate _____Signature of Participant _____

Date _____

2. I don't agree to participate (Stop here); thank you.

Data collector's name_____

Signature_____

Date_____

Annex III: Questionnaire (English version)

Questionnaire to assess Knowledge, attitude and practice of parents of children using medical service at TASH towards COVID-19 in children, Addis Ababa (English version)

Part I: Socio-demographic characteristics of the study participants

1. Parental age in year _____
2. Gender 1.M 2.F
3. Residence 1. Urban 2. Rural
4. Levels of Education
 1. Illiterate 2.Can read and write 3.Primary education
 4. Secondary education 5. Diploma 6.Degree 7.Higher education
5. Occupation
 1. Governmental 3. Trader 5. Farmer
 2. Non-governmental 4. Daily laborer 6.Housewife
 7. Other
6. Monthly household income
 1. Less than 500birr 2. 500 to 1000birr 3. 1001 to 5000birr
 - 4.5001-10,000birr 5. More than 10,000birr
7. Marital status
 1. Single 2.Married 3.Divorced 4.Widowed
8. Number of children
 - 1.1-3 2.4-6 3.7children and above
9. Source of information regarding COVID-19
 1. Family, friends, neighbours 4. Ministry of Health website
 2. TV/Radio/News channels 5. Google and other search engines
 3. Social media 6. Scientific articles and research
 7. Others

Part II: Questions to assess knowledge of participants regarding COVID-19 in children please encircle or mark your answer

1. Do children infected with COVID-19 show symptoms?

1. Yes 2.No 3.I don't know

2. If your answer to question no.1 is yes, which of the following are the symptoms and signs of COVID-19 in children?

- | | | | |
|-------------------|----------------------------------|------------------------------------|----------------------|
| 1. Fever | 2.Fatigue | 3.Cough | 4.Runny nose |
| 5. Sore throat | 6.Shortness of breath | 7.Loss of sense of smell and taste | |
| 8. Abdominal pain | 9.Diarrhoea | 10.Vomiting | 11.joint/muscle pain |
| 12. Red eyes | 13.Red or swollen hands and feet | 14.Skin rash | |
| 15. Headache | 16.Others, | 17.I don't know | |

3. How could children acquire the coronavirus disease?

1. Directly through breathing/ sneezing
2. Directly through contact with infected surfaces
3. Directly through contact with infected individuals (handshaking, hugging, kissing)
4. Consumption of contaminated food
5. Not frequently washing their hands
6. During pregnancy and childbirth if the mother is infected with COVID-19
7. During breast feeding if the mother is infected with COVID-19
8. I don't know

4. What do you think is the risk factor for severity of COVID-19 in children?

1. Severe form of COVID-19 occur in younger children than older children
2. Male gender is a risk factor for severe form of the disease
3. Underlying Medical Comorbidity
4. Others
5. I don't know

5. Which of the following age group of children is at risk of severity of COVID-19?

1. Under 1 year 3.6 to 10 years

2. 1 to 5 years 4.Above 10 years 5. I don't know
6. Can asymptomatic children infected with COVID-19 transmit the disease?
1. Yes 2.No 3.I don't know
7. What are the current ways of prevention of COVID-19 in children?
1. Vaccination 2.Anti-viral therapy 3.Using masks
4. Frequent washing of hands 5.Frequent disinfectant use
6. Staying >2meters from others 7. Others_____ 8. I don't know
8. Can children of all ages wear masks to prevent the disease?
1. Yes 2.No, if no specify 3.I don't know
9. Which of the following is the treatment for COVID-19 in children?
1. Symptomatic therapy
2. Antibiotics
3. Antiviral
4. No treatment
- 5.Others 6.I don't know

Part III: Questions to assess attitude of participants regarding COVID-19 in children, please encircle or mark your answer.

1. Do you think your child/ children can be infected with COVID-19?

1. Yes

2.No
2. Do you think you know symptoms and signs of COVID-19 in children?

1. Yes

2.No
3. Do you think that you are carrying out the recommended prevention measures to protect your child/ children against COVID-19?

1. Yes

2. No
4. Do you think that early diagnosis of COVID-19 in children can enhance treatment outcomes?

1. Yes

2. No

5. Do you believe that children who are diagnosed with COVID-19 can be managed at home?

1. Yes 2.No

6. Do you believe that the information provided so far is good enough to protect your child/children from COVID-19?

1. Yes 2.No

7. Did you think that COVID-19 can result in death in children?

1. Yes 2.No

8. If COVID-19 vaccination to children is introduced in Ethiopia, are you going to let your child/children get vaccinated?

1. Yes 2.No

If your answer to question No.9 is no, Why? _____

Part IV: Questions to assess measures practiced by participants to protect their child/children against COVID-19, please encircle or mark your answer.

1. Do you make sure that your child/children wore a facemask before he/she/ they leave home? (For children greater than 2 years of age)

1. Always 2.Often 3.Sometimes 4.Never

2. Do you make sure your child/ children wash his/her/ their hands according to the recommendation?

1. Always 2.Often 3.Sometimes 4.Never

3. Do you routinely clean and disinfect surfaces that your child/ children are in contact with?

1. Always 2.Often 3.Sometimes 4.Never

4. Do you prevent your children from handshaking, hugging and kissing people?

1. Always 2.Often 3.Sometimes 4.Never

5. Do you make sure that your child/children don't consume food outside?

1. Always 2.Often 3.Sometimes 4.Never

6. Do you make sure that your child/ children don't go to crowded places?

1. Always 2.Often 3.Sometimes 4.Never

7. Do you make sure that shared spaces in the home have good air flow?

1. Always

2. Often

3. Sometimes

4. Never

Thank you

Annex IV: Information sheet (Amharic version)

የጥናቱ መረጃ ሰነድ

ይህ ጥናት በዶ/ር ቤተልሔም ዳምጤ መሪነት የሚካሄድ ሲሆን የሶስተኛ ዓመት የህፃናት ህክምና ስፔሻላይዜሽን ትምህርት ለማጠናቀቅ ሲባል ታልሞ የተዘጋጀ ነው።

የዚህ ጥናት አላማ በጥቁር አንበሳ ስፔሻላይዜድ ሆስፒታል ውስጥ ልጆቻቸው የህክምና አገልግሎት እያገኙ ያሉ ወላጆች ስለ ኮቪድ 19 በሽታ በልጆች ላይ ያላቸውን እውቀት ፣ አመለካከት እና ተግባራዊ ምላሽ የሚዳስስ ነው።

ከዚህ የምርምር ስራ በተገኘ ውጤት ወላጆች ስለ ኮቪድ 19 በሽታ በልጆች ላይ ያላቸውን እውቀት ለመጨመር ይረዳል ተብሎ ይታሰባል እንዲሁም ወላጆች ያላቸውን አመለካከት እና ተግባራዊ ምላሽ እንዲያጤኑ ይረዳል ።

ይህ ጥናት ሙሉ በሙሉ የአካዳሚክ ጥናት ሲሆን ለሌላ አላማ አይውልም ። በጥናቱ ተሳታፊዎች የቀረቡት መረጃዎች በሙሉ በሚስጥራዊነት ይቀመጣሉ እንዲሁም የመረጃው ምንጭ የማይታወቅ ይሆናል።

በጥናቱ ውስጥ ያሉት ተሳትፎ በፈቃደኝነት ላይ የተመሰረተ ነው ። የማይፈልጉትን ጥያቄዎች ያለመመለስ መብት አለዎት ። በዚህ ጥናት ላይ ያለመሳተፍ ሙሉ መብት አለዎት ።

ስለዚህ ጥናት ተጨማሪ መረጃ ከፈለጉ የጥናቱን ዋና መርማሪ ማግኘት ይችላሉ።

የጥናቱ ዋና መርማሪ ስም ፡- ዶ/ር ቤተልሔም ዳምጤ

ስልክ:-09-29-92-18-77

Annex V: Certificate of consent (Amharic version)

የጥናቱ ስምምነት ሰነድ

በጥናቱ መረጃ ሰነድ ላይ የተገለጹትን ሙሉ በሙሉ ተረድቻለሁ። በዚህ ጥናት ላይ ተሳታፊ የምሆነው በገዛ ፈቃዴ ብቻ እንደሆነ አውቄያለሁ።

የጥናቱ ተሳታፊ ለመሆኑ ፍቃደኛ ኖት?

1. አዎ ፍቃደኛ ነኝ -----

የተሳታፊ ፊርማ----- ቀን -----

2. አይ ፍቃደኛ አይደለሁም

ፍቃደኛ ካልሆኑ እዚህ ጋር ያቆማሉ አመሠግናለሁ።

የመረጃ ሰብሳቢ ስም -----

ፊርማ-----

ቀን-----

Annex VI: Questionnaire (Amharic version)

የጥናት መጠይቅ

በጥቁር አንበሳ ሆስፒታል ልጆቻቸው የህክምና አገልግሎት እያገኙ ያሉ ወላጆች ስለ የኮቪድ 19 በሽታ በልጆች ላይ ያላቸውን እውቀት አመለካከት እና ተግባራዊ ምላሽ የሚዳስስ የምርመራ ጥናት

የኮድ ቁጥር ----- ቀን-----

ክፍል አንድ :- የጥናቱ ተሳታፊዎች ማህበራዊ ስነህዝብ መረጃ

1. የወላጅ እድሜ (በአመት)-----

2. ፆታ 1. ወንድ 2. ሴት

3. የመኖሪያ አድራሻ 1. ከተማ 2. ገጠር

4. የትምህርት ደረጃ

1. ያልተማረ

5. ዲፕሎማ

2. ማንበብ እና መፃፍ የሚችል

6. ዲግሪ

3. የመጀመሪያ ደረጃ ትምህርት

7. ከፍተኛ የትምህርት ደረጃ

4. የሁለተኛ ደረጃ ትምህርት

5. የስራ ሁኔታ

1. የመንግስት ድርጅት ተቀጣሪ

5. ገበሬ

2. ምንግስታዊ ያልሆነ ድርጅት ተቀጣሪ

6. የቤት እመቤት

3. ነጋዴ

7. ሌላ የስራ ዘርፍ-----

4. የቀን ሰራተኛ

6. ወርሀዊ የገቢ መጠን

1. ከ500 ብር ያነሰ

2. ከ500 ብር እስከ 1000 ብር

3. ከ1001 ብር እስከ 5000 ብር

4. ከ5001 ብር እስከ 10,000 ብር

5. ከ 10,000 ብር በላይ

7. የጋብቻ ሁኔታ

1. ያላገባ 2. ያገባ 3. የፈታ 4. ባል/ሚስት የሞተበት/ባት

8. ያሎት የልጅ መጠን

1. ከአንድ እስከ ሶስት ልጆች
2. ከአራት እስከ ስድስት ልጆች
3. ከሰባት ልጆች በላይ

9. ስለ የኮቪድ 19 በሽታ የመረጃ ምንጮች

1. ከቤተሰብ ዳደኛ እና ጎረቤት
2. ከዜና ጣቢያዎች
3. ከማህበራዊ ድህረ ገጾች
4. ከጤና ጥበቃ ድህረ ገጽ
5. ከ 'Google' መጠይቅ
6. ሳይንሳዊ ምርምር እና ጥናት በማንበብ
7. ሌላ ምንጭ-----

ክፍል ሁለት :- የጥናቱ ተሳታፊዎችን እውቀት ለመዳሰስ የተዘጋጁ ጥያቄዎች

1. በኮቪድ 19 በሽታ የተጠቁ ልጆች ምልክት ያሳያሉ ?

1. አዎ
2. አይ
3. ግንዛቤ የለኝም

2. የተራ ቁጥር አንድ ጥያቄ ምላሽ አዎ ከሆነ ቀጥሎ ከተዘረዘሩት ውስጥ በኮቪድ 19 በሽታ የተጠቁ ልጆች የሚያሳዩዋቸው ምልክቶች የትኞቹ ናቸው ?

- | | |
|-----------------------------------|----------------------------|
| 1. ትኩሳት | 9. ተቅማጥ |
| 2. ድካም | 10. ትኩሳት |
| 3. ሳል | 11. የመገጣጠሚያ እና የጡንቻ ህመም |
| 4. ከአፍንጫ የሚወጣ ፍሳሽ | 12. የአይን መቅለት |
| 5. የጉሮሮ ህመም | 13. የእጅ እና እግር መቅለት እና ማበጥ |
| 6. ትንፋሽ ማጠር | 14. ሰውነት ላይ ሽፍታ መውጣት |
| 7. ሽታን እና ጣዕምን መለየት አለመቻል የሆድ ህመም | 15. የራስ ምታት |
| 8. የሆድ ህመም | 16. ሌሎች ካሉ ----- |
| | 17. ግንዛቤ የለኝም |

3. ልጆች በምን አይነት መንገዶች (ምክንያት) በኮቪድ 19 በሽታ ሊጠቁ ይችላሉ ?

1. በማስነጠስ እና በትንፋሽ
2. የተበከሉ ነገሮችን በመንካት
3. በበሽታው ከተጠቁ ሰዎች ጋር በሚደረግ ግንኙነት በመጨበጥ ፣ በመተቃቀፍና በመሳሰሉ
4. የተበከሉ ምግቦችን በመመገብ
5. በተደጋጋሚ እጅን ባለመታጠብ
6. በእርግዝና እና በወሊድ ጊዜ (እናት በኮቪድ 19 በሽታ ከተጠቃች)
7. በጡት ማጥባት ጊዜ (እናት በኮቪድ 19 በሽታ ከተጠቃች)
8. ግንዛቤ የለኝም

4. በኮቪድ 19 በሽታ ምክንያት ለከፋ የጤና እኩል ተጋላጭ የሚሆኑት ልጆች የትኞቹ ናቸው?

1. በእድሜያቸው አነስተኞች የሆኑት ልጆች እድሜያቸው ከፍ ካሉ ልጆች የበለጠ በኮቪድ 19 በሽታ ምክንያት ለከፋ የጤና እኩል ተጋላጭ ናቸው።

2. ወንዶች ከሴቶች ይልቅ ለከፋ የጤና እኩል ተጋላጭ ናቸው።

3. ተዳዳኝ በሽታ ያለባቸው ልጆች ለከፋ የጤና እኩል ተጋላጭ ናቸው።

4. ሌላ ምላሽ-----

5. ግንዛቤው የለኝም

5. ከዚህ ቀጥሎ ከተዘረዘሩት የህፃናት ዕድሜ ክልል ውስጥ በኮቪድ 19 በሽታ ምክንያት ለከፋ የጤና እኩል ተጋላጭ የሆኑት የትኞቹ ናቸው ?

1. ከአንድ አመት በታች የሆኑት ልጆች

2. ከአንድ አመት እስከ አምስት አመት ያሉት ልጆች

3. ከስድስት አመት እስከ አስር አመት ያሉ ልጆች

4. ከአስር አመት በላይ ያሉ ልጆች

5. ግንዛቤው የለኝም

6. የኮቪድ 19 በሽታ ምልክት የሚያሳዩ ልጆች በሽታውን ማስታላለፍ ይችላሉ ?

1. አዎ

2. አይ

3. ግንዛቤው የለኝም

7. በአሁኑ ወቅት ልጆች በኮቪድ 19 በሽታ እንዳይጠቁ የሚያግዙት የትኞቹ ናቸው ?

1. ክትባት

7. ሌሎች-----

2. የፀረ ቫይረስ መድሃኒት

8. ግንዛቤው የለኝም

3. የፊት ጭምብል መጠቀም

4. በተደጋጋሚ እጅን መታጠብ

5. በተደጋጋሚ የጀርም መፅጃዎችን መጠቀም

6. ከማንኛውም ግለሰብ ከ2 ሜትር በላይ ርቀት መጠበቅ

8. በሁሉም የዕድሜ ክልል ላይ ያሉ ህፃናት የፊት ጭምብል መጠቀም ይችላሉ ?

1. አዎ

3. ግንዛቤው የለኝም

2. አይደለም አይደለም ካሉ ምክንያት -----

9. ከዚህ ቀጥሎ ከተዘረዘሩት ውስጥ በኮቪድ 19 የተጠበቁ ልጆች ህክምና የትኛው ነው;

1. ምልክታዊ ህክምና

4. ህክምና የለውም

2. የፀረ ባክቴሪያ መድሀኒት

5. ሌላ ካለ -----

3. የፀረ ቫይረስ መድሀኒት

6. ግንዛቤው የለኝም

ክፍል ሶስት:- የጥናቱ ተሳታፊዎችን አመለካከትን ለመዳሰስ የተዘጋጁ ጥያቄዎች

1. የእርሶ ልጅ/ልጆች በኮቪድ 19 በሽታ ሊጠቁ ይችላሉ ብለው ያስባሉ?

1. አዎ

2. አይ

2. የኮቪድ 19 በሽታ በልጆች ላይ የሚያሳያቸውን ምልክቶች አውቃለው ብለው ያስባሉ?

1. አዎ

2. አይ

3. ልጆች በኮቪድ 19 በሽታ እንዳይጠቁ የሚመከሩ የመከላከያ መንገዶችን እየተገበርኩ ነው ብለው ያስባሉ?

1. አዎ

2. አይ

4. በኮቪድ 19 በሽታ የተጠቁ ልጆችን ቀድሞ መለየት ህክምናው ውጤታማ እንዲሆን ያደርጋል ብለው ያስባሉ?

1. አዎ

2. አይ

5. በኮቪድ 19 በሽታ የተጠቁ ልጆች በቤት ውስጥ ክትትል ማድረግ ይቻላል ብለው ያስባሉ?

1. አዎ

2. አይ

6. እስከአሁን ያገኙት መረጃ ልጆችን ከኮቪድ 19 በሽታ ለመጠበቅ በቂ ነው ብለው ያስባሉ?

1. አዎ

2. አይ

7. የኮቪድ 19 በሽታ በልጆች ላይ ሞትን ሊያስከትላል ይቻላል ብለው ያስባሉ?

1. አዎ

2. አይ

8. የኮቪድ 19 ክትባት ኢትዮጵያ ውስጥ ለህፃናት መሰጠት ቢጀመር ልጆችን ያስከትባሉ?

- 1.አዎ 2.አይ

ለተራ ቁጥር ዘጠኝ ጥያቄ ምልሽዎች አላስከትብም ከሆነ ምክንያቶችን ይዘርዝሩ-----

ክፍል አራት:- የጥናቱ ተሳታፊዎች የተግባር ምላሽን ለመዳሰስ የተዘጋጁ ጥያቄዎች

1. የእርስ ልጅ /ልጆች ከቤት ከመውጣታቸው በፊት የፊት ጭንብል ማድረጉን/ማድረጓን/ማድረጋቸውን ያረጋግጣሉ(እድሜያቸው ከሁለት አመት በላይ የሆኑ ልጆች ላሉዋቸው ወላጆች)?

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራ

2. የእርስ ልጅ/ልጆች እጁን /እጁን /እጃቸውን በሚመከረው የእጅ አስተጣጥብ መንገድ መታጠቡን/መታጠቧን/መታጠባቸውን ያረጋግጣሉ?

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራሽ

3. ከእርስ ልጅ /ልጆች ጋር ንክኪ ያላቸው ነገሮች በፀረ-ጀርም ማፅጃዎች በመጠቀም የሚያፀዱት

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራሽ

4. የእርስ ልጅ/ልጆች ከሌሎች ሰዎች ጋር እንዳይጨባበጡ፤እንዳይተቃቀፉ እና እንዳይሳሳሙ የሚከለክሉት

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራሽ

5. የእርስ ልጅ/ልጆች ከቤት ውጪ አለመመገባቸውን ያረጋግጣሉ?

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራሽ

6. የእርስ ልጅ/ልጆች ብዙ ሰው የሚሰበሰብበት አካባቢ አለመገኘቱን ያረጋግጣሉ?

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራሽ

7. በጋራ የሚኖሩበት ቤት ውስጥ በቂ የአየር ዝውውር መኖሩን ያረጋግጣሉ?

- 1.ሁልጊዜ 2.አልፎ አልፎ 3.አንድአንዴ 4.በጭራሽ

አመሠግናለሁ